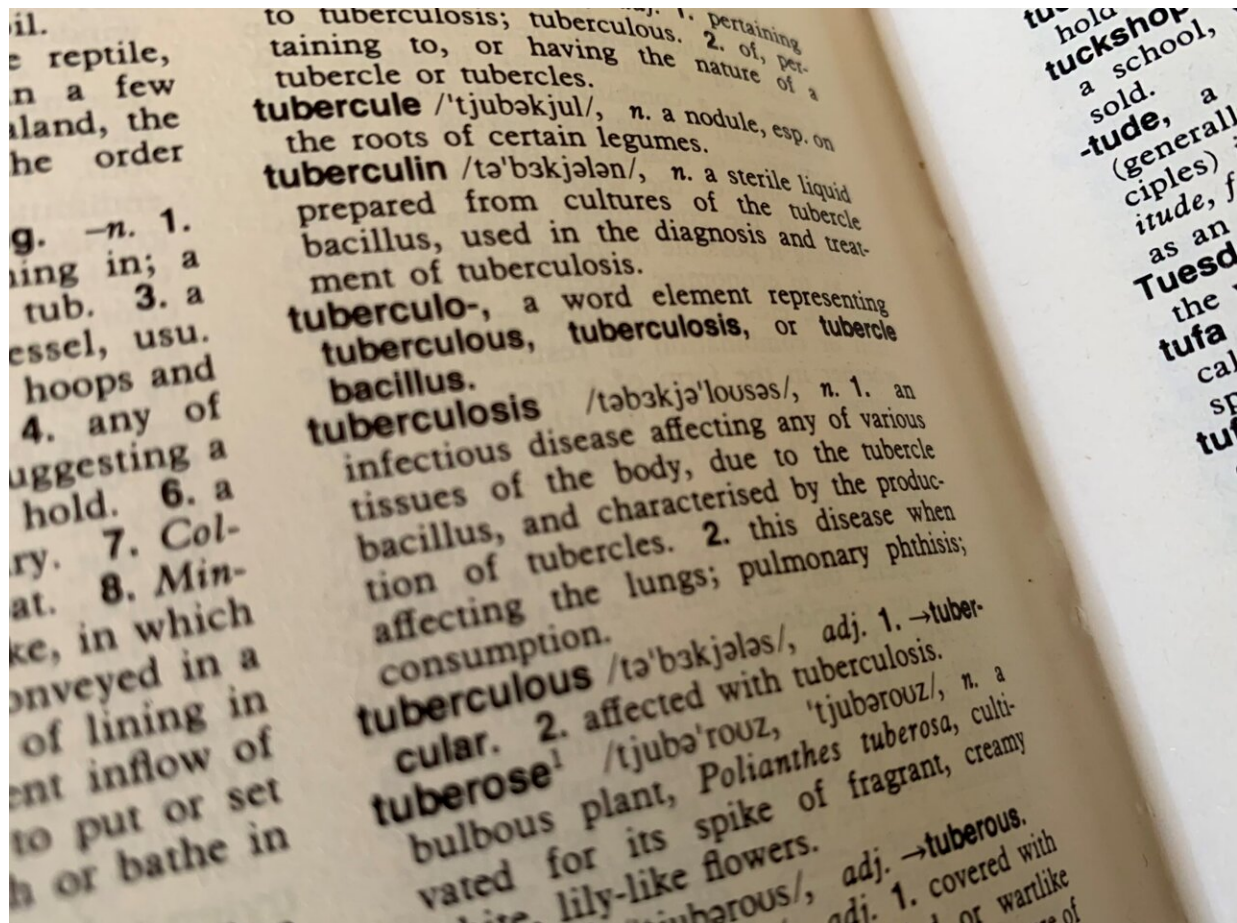


Prevention better than cure in race to slash rates of TB, global review finds

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Credit: Telethon Kids Institute

The first global review of the effectiveness of current strategies to fight

tuberculosis—the leading infectious cause of death globally—has found preventive therapy is the most effective intervention strategy.

In a paper titled "Comparative effectiveness of interventions for preventing tuberculosis: [systematic review](#) and network meta-analysis of interventional studies" published in *eClinicalMedicine*, a team led by researchers from Telethon Kids Institute and Curtin University found preventive drugs given to those at risk of developing tuberculosis (TB) offered the best chance of helping to reach World Health Organization (WHO) goals to slash TB cases worldwide by 90% by 2035.

There were 10.6 million cases of TB globally in 2021, with 1.6 million TB-related deaths. Most cases occur in Africa and South-East Asia, with 30 countries carrying the highest burden.

More than 25% of the world's population are believed to have latent TB—a symptomless condition that can turn into active, potentially deadly infection at any time.

Ph.D. student and lead researcher Alemneh Liyew—from the Geospatial and Tuberculosis Research Team at Telethon Kids Institute, the School of Population Health at Curtin University and the Institute of Public Health at the University of Gondar in Ethiopia—said countries desperate to reduce TB incidence had been hampered by a lack of evidence about the effectiveness of measures used to prevent the disease.

"Understanding the most effective public health interventions is crucial if countries are to be able to design the most efficient solutions, taking into account their local resources and capacity constraints," Liyew said.

The team reviewed dozens of studies to compare the effectiveness of all available preventive interventions, including TB preventive treatment, nutrition, TB screening, BCG vaccination, and TB candidate vaccines.

"We found the most effective intervention in reducing TB incidence among those at risk of developing active disease was TB [preventive therapy](#)," Liyew said.

TB preventive therapy is a course of one or more anti-TB medicines designed to prevent the development of active TB in those who have been exposed to a case, especially within their household. It is recommended by WHO for people in high-risk populations, such as those living with HIV or those who have children aged under 5 years within the house.

"Despite its proven effectiveness, TB preventive therapy is globally highly underutilized," Liyew said. "It is in use but there is a gap.

"For instance, although the first United Nations high-level meeting on TB in 2018 enacted ambitious preventive treatment targets, only 8.7 million people received [preventive treatment](#) over the following three years: less than a third of the five-year target."

Liyew said despite TB incidence and mortality being on the rise globally—partly due to disruption to health care provision caused by the COVID-19 pandemic—most resources still tended to be directed at diagnosis and treatment of TB, rather than prevention.

"There is a need for a substantial expansion of efforts and resources, including household-level TB screening integrated with the health system, if we are to improve the provision of TB preventive treatments and reach reduction targets," he said.

The team also investigated which drug regimen used within TB preventive therapy was most likely to be effective, finding a combination of isoniazid plus streptomycin was the most likely best treatment—however, this was based on only one study.

"Further trials are needed to verify its efficacy before it can be included as an option in future guidelines," Liyew said.

More information: Alemneh Mekuriaw Liyew et al, Comparative effectiveness of interventions for preventing tuberculosis: systematic review and network meta-analysis of interventional studies, *eClinicalMedicine* (2023). [DOI: 10.1016/j.eclinm.2023.102209](https://doi.org/10.1016/j.eclinm.2023.102209)

Provided by Telethon Kids Institute

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